

REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office Action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention.

Summary of Changes Made

By this Amendment, claims 1, 3, 4, 7-11, 16-18 and 20 have been amended, claims 2, 5, 6, 27-30, 32-37 and 40-49 have been canceled, and new claims 50-72 have been added to the application. Accordingly, claims 1, 3, 4, 7-12, 14-21 and 50-72 are presently pending in the application. No new matter has been added.

As disclosed in the specification, the present invention provides two platinum alloy compositions. Each of the platinum alloy compositions disclosed in the specification contains a different amount of platinum. In one embodiment of the invention, the platinum alloy composition consists essentially of 55 to 63 weight percent of platinum, 2 to 10 weight percent of cobalt, 27 to 43 weight percent of copper and optionally one or more property enhancing additives, provided the total amount of property enhancing additives is less than 5 wt.% (see, e.g., page 8, lines 8-19, which correspond to paragraphs [0056] and [0057] of U.S. Pat. App. Publ. US 2005/0169791 A1). In the other embodiment of the invention, the platinum alloy composition consists essentially of 70 to 79.5 weight percent of platinum, 2 to 10 weight percent of cobalt, 10.5 to 28 weight percent of copper and optionally one or more property enhancing additives, provided the total amount of property enhancing additives is less than 5 wt.%.

By this Amendment, applicant has canceled all of the claims directed to the platinum alloy composition that contains 70 to 79.5 weight percent of platinum. Applicant reserves the right to pursue the canceled subject matter in one or more continuation applications. Thus, all of the claims remaining in the present application relate to the platinum alloy composition that contains 55 to 63 weight percent platinum and methods and products related thereto.

Claim Rejections - 35 USC §112

In the prior Office Action, the Examiner rejected claims 5 and 6 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. By this Amendment, claims 5 and 6 have been canceled. Accordingly, the prior rejection thereof is now moot.

Claim Rejections - 35 USC §103

Also in the prior Office Action, the Examiner rejected claims 1-8, 11, 12, 14-21, 27, 28 and 32-49 under 35 U.S.C. §103(a) as being unpatentable over the English language Abstract of Japanese Pub. No. 404087260A (hereinafter "JP '260"). As noted above, claims 2, 5, 6, 27, 28, 32-37 and 40-49 have been canceled. Accordingly, the rejection thereof is now moot. Applicant respectfully requests reconsideration of the rejection of claims 1, 3, 4, 7, 8, 11, 12 and 14-21 for the reasons set forth below.

JP '260 discloses a supported platinum quadruple alloy electrode catalyst that consists of fine grains of a platinum quadruple solid solution alloy (Pt-Co-Ni-Cu) dispersed in a conductive carbon powder support material. The platinum quadruple alloy disclosed in JP '260 consists of 40-70 atom% platinum, 9-27 atom% cobalt, 9-27 atom% nickel and 9-27 atom% copper. When atom% is converted to wt.%, the platinum quadruple alloy according to JP '260 consists of:

68.1 to 94.4 wt.% platinum;
3.4 to 14.0 wt.% cobalt;
3.4 to 13.9 wt.% nickel; and
3.7 to 15.0 wt.% copper.

Claim 1, as amended, claims a platinum alloy consisting essentially of:

55 to 63 wt.% of platinum,
2 to 10 wt.% of cobalt,
27 to 43 wt.% of copper, and
optionally, one or more property enhancing additives,
provided the total amount of property enhancing
additives is less than 5 wt.%.

Thus, the broadest disclosed platinum quadruple alloy according to JP '260 contains more platinum than permitted in the platinum alloy according to claim 1 (claim 1: max 63 wt.% Pt; JP '260: min 68.1 wt.% Pt) and less than the minimum copper required to be present in the platinum alloy according to claim 1 (claim 1: min 27 wt.% Cu; JP '260: max 15.0 wt.% Cu).

With respect to JP '260, the Examiner stated in the prior Office Action that:

Japanese '260 teaches a platinum alloy containing cobalt and copper in the wt% ranges that overlap or closely approximate those received by the instant claims, see examples C-6 (70%Pt-9.46%Co-9.4%Ni-10%Cu) and example C-17 (79%Pt-11.5%Co-12.4%Cu). The "comprising" and "consisting essentially of" language of the instant claims allow for the addition of Ni in the alloys of Japanese '260 since the term "comprising" allows for the addition of other elements even in major amounts, and the term "consisting essentially of" allows for the addition of elements which do not materially affect the properties of the claimed alloy. Further applicant has defined "consisting essentially of", at page 8 of the originally filed specification as allowing for the inclusion of property enhancing additives such as hardeners, a deoxidizing agent, grain reducing agent or color variation agent, where Ni is specifically stated as an element which can be added to the alloy of the invention if desired (see page 8, lines 5-8 of the original specification for example). It has been well settled that where the prior art discloses a compositional range which overlaps or closely approximates a claimed alloy range, absent any demonstrated or new or unexpected result arising therefrom, motivation to modify the prior art alloy to meet the claimed alloy range would have been a modification obvious to one of ordinary skill in the art at the time the invention was made. See MPEP 2144.05.

In response, applicant has amended claim 1 to incorporate the language recited on page 8 of the specification referenced by the Examiner that explains what is meant by the phrase "consisting essentially of". In addition, applicant notes that JP '260 recites the constituents of the alloy in terms of atom%, rather than wt.% as in the present application. And, as noted above, when atom% is converted to wt.%, the platinum quadruple alloy according to JP '260 does not "overlap or closely approximate" the alloy claimed by applicant in claim 1. In fact, JP '260 discloses an alloy that is quite different compositionally from the alloy claimed by applicant in claim 1 (e.g., the alloy according to JP '260 contains too much platinum and an insufficient amount of copper).

Applicant respectfully submits that there is no teaching whatsoever in JP '260 that would motivate one having ordinary skill in the art to deviate from the compositional ranges specified in JP '260 to arrive at platinum alloy composition as claimed in claim 1. The Examiner cannot establish a *prima facie* case of obviousness simply by identifying a prior art reference that discloses an alloy that contains elemental constituents that are similar to the alloy as claimed, but in significantly different amounts, and then arguing that it would have been obvious to modify the teachings of the prior art reference to read on the claimed alloy. There must be something in the reference teachings that would motivate one of skill in the art to modify the composition. In this case, JP '260 contains no teachings that would motivate one to modify the composition of the alloy disclosed therein. JP '260 teaches a supported platinum quadruple alloy electrode catalyst that consists of fine grains of a platinum quadruple solid solution alloy (Pt-Co-Ni-Cu) dispersed in a conductive carbon powder support material. The ornamental appearance and physical properties of a catalyst are meaningless. There simply is no motivation to modify that reference to arrive at applicant's claimed alloy.

Furthermore, the Examiner's contention that applicant must submit evidence demonstrating that the alloy according to claim 1 possesses new and/or unexpected results as compared to the alloy according to JP '260 does not accord US patent law. The alloy according to JP '260 is not at all similar to the alloy claimed in claim 1, and applicant is not required to expend the considerable resources it would take to prepare such an alloy and have it tested simply to confirm that it does not possess similar properties. Applicant's alloy as claimed is significantly different in composition to the alloy disclosed in JP '260, and no additional showing is required.

Claims 3, 4, 7, 8 and 11 depend from claim 1 and are thus patentable over JP '260 for the same reasons that claim 1 is patentable over JP '260. In addition, claims 12 and 14-21 include the same limitations (or narrower ranges) regarding platinum content and copper content as claim 1, and are thus patentable over JP '260 for the same reasons claim 1 is patentable over JP'260.

In the prior Office Action, the Examiner also rejected claims 9, 10, 29 and 30 under U.S.C. §103(a) as being unpatentable over JP'260 as applied to claims 1 and 2 further in view of the English language Abstract of Japanese Pub. No. 356029641A

(hereinafter "JP '641"). As noted above, claims 29 and 30 have been canceled. Accordingly, the rejection thereof is now moot. Applicant respectfully requests reconsideration of the rejection of claims 9 and 10 for the reasons set forth below.

JP '641 discloses a decorative platinum alloy consisting of:

80-95 wt.% platinum;
0.01-5.0 wt.% Misch metal; and
1 to 15 wt.% in total of at least one of Pd, Ir, Ru, Rh, Au,
Ag, Cu, Ni and Co.

"Misch metal" refers to a mixture of mostly Ce and La, with small amounts of Nd and Pr. Claims 9 and 10 both depend from claim 1, which claims a platinum alloy consisting essentially of:

55 to 63 wt.% of platinum,
2 to 10 wt.% of cobalt,
27 to 43 wt.% of copper, and
optionally, one or more property enhancing additives,
provided the total amount of property enhancing
additives is less than 5 wt.%.

Claim 9, as amended, claims the platinum alloy according to claim 1, wherein said alloy contains a total of 0.001 to 2 wt.% of one or more property enhancing additives selected from the group consisting of palladium, iridium and ruthenium. And, claim 10, as amended, claims the platinum alloy according to claim 1, wherein said alloy contains a total of 0.001 to 2 wt.% of one or more property enhancing additives selected from the group consisting of indium and gallium.

As noted above, the platinum quadruple alloy according to JP '260 contains more platinum than permitted in the platinum alloy according to claim 1 (claim 1: max 63 wt.% Pt; JP '260: min 68.1 wt.% Pt) and less than the minimum copper required to be present in the platinum alloy according to claim 1 (claim 1: min 27 wt.% Cu; JP '260: max 15.0 wt.% Cu). Likewise, the decorative platinum alloy according to JP'641 contains more platinum than permitted in the platinum alloy according to claim 1 (claim 1: max 63 wt.% Pt; JP '641: min 80 wt.% Pt) and less than the minimum copper required to be present in the platinum alloy according to claim 1 (claim 1: min 27 wt.% Cu; JP '641: max 15.0 wt.% Cu). Thus, even if the teachings

of JP'260 and JP'641 could be combined (and this would be a dubious combination in view of the fact that JP'260 is directed to a platinum quadruple alloy electrode catalyst consisting of fine grains of a platinum quadruple solid solution alloy dispersed in a conductive carbon powder support material and JP'641 is directed to a decorative platinum alloy), there is no teaching in either reference that would motivate one having skill in the art to arrive at a platinum alloy as claimed in claims 9 and 10. Reconsideration of the rejection of claims 9 and 10 is thus respectfully requested.

Also in the prior Office Action, the Examiner rejected claims 2, 5, 6, 27-37 and 40-49 under 35 U.S.C. §103(a) as being unpatentable over JP'641 or JP'032. As noted above, claims 2, 5, 6, 27-37 and 40-49 have been canceled, which renders the prior rejection thereof moot.

Finally, the Examiner rejected claims 1-8, 11, 12, 14-21 and 27-49 under 35 U.S.C. §103(a) as being unpatentable over Ostermann et al., U.S. Pat. No. 382,827 (hereinafter "Ostermann et al."). As noted above, claims 2, 5, 6, 27-49 have been canceled. Accordingly, the rejection thereof is now moot. Applicant respectfully requests reconsideration of the rejection of claims 1, 3, 4, 7, 8, 11, 12 and 14-21 for the reasons set forth below.

Ostermann et al. discloses a platinum alloy for use in the production of ornamental and decorative articles that consists of:

60 to 70 parts platinum;
10 to 20 parts nickel;
1 to 2 parts cobalt;
10 to 20 parts copper;
1 to 2 parts Wolfram (tungsten); and
1 to 15 parts cadmium.

As noted above, claim 1 claims a platinum alloy consisting essentially of:

55 to 63 wt.% of platinum,
2 to 10 wt.% of cobalt,
27 to 43 wt.% of copper, and
optionally, one or more property enhancing additives,
provided the total amount of property enhancing
additives is less than 5 wt.%.

Thus, the platinum alloy according to Ostermann et al. contains more nickel than could be permitted in the platinum alloy according to claim 1 (claim 1: max 5 wt.% property enhancing additives such as nickel; Ostermann et al.: min 10 parts nickel) and less than the minimum copper required to be present in the platinum alloy according to claim 1 (claim 1: min 27 wt.% copper; Ostermann et al.: max 20 parts copper). There is no teaching in Ostermann et al. that would motivate one having ordinary skill in the art to deviate from the compositional ranges specified in Ostermann et al. to arrive at platinum alloy composition as claimed in claim 1.

Claims 3, 4, 7, 8 and 11 depend from claim 1 and are thus patentable over Ostermann et al. for the same reasons that claim 1 is patentable over Ostermann et al.. In addition, claims 12 and 14-21 include the same limitations (or narrower ranges) regarding platinum content and copper content as claim 1, and are thus patentable over Ostermann et al. for the same reasons claim 1 is patentable over Ostermann et al. Reconsideration of the rejection of claims 1, 3, 4, 7, 8, 11, 12 and 14-21 is thus respectfully requested.

New Claims

New claim 50 depends from independent composition claim 1. New claims 51-61 depend from independent method claim 16. And, new claims 62-72 depend from independent product claim 18. New claim 50 specifies that the Vickers hardness of the alloy, measured at soft state, is between about 130 to 210 HV10. New claims 51-72 include the same limitations as the claims pending from claim 1. No new matter has been added.

Conclusion

In light of the foregoing, it is respectfully submitted that the present application is in condition for allowance and a notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge the same to our Deposit Account No. 18-0160, our Order No. COH-15303.

Respectfully submitted,

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